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# ENVIRONMENTAL Fact Sheet

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29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • [www.des.nh.gov](http://www.des.nh.gov)

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## Mercury in the Environment

### **What is mercury and how is it used?**

Mercury is a naturally occurring element found in rocks, soils, sediments and the atmosphere. It is a relatively stable metal which does not readily react chemically. Mercury will vaporize at relatively low temperatures so it can enter the atmosphere through the combustion of mercury containing materials and through natural processes such as the eruption of volcanoes.

Historically, mercury was used by man in many ways including the manufacturing of mirrors and hats, as a fungicide for agricultural applications and in paints, as a processing chemical for production of chlorine and as a component of electrical products such as batteries and fluorescent lamps. During wartime mercury was used as a component of detonators for ordnance. In recent years as the toxic potential of mercury has become better understood, many of these applications have been discontinued and the quantity in use today is probably much less than in past years.

### **What are the sources of mercury emissions?**

Many sources of mercury emissions to the environment exist, including both natural and man-made. The actual and relative amounts of mercury released from each source is not well known and is under study. However, the largest man-made source is probably fossil fuel combustion, particularly coal fired power plants. Other man-made sources include trash incinerators, smelters, chlori-alkali plants, lighting manufacturers and a variety of other smaller sources. Natural sources include volcanoes and vapors from soils and rocks. Most of the mercury in New Hampshire probably comes from sources outside the state.

### **How is mercury transported to New Hampshire's freshwater fish?**

The major pathway of mercury to lakes is atmospheric deposition. This means that fish from remote lakes may contain mercury levels that are similar to fish from lakes in industrialized areas. The mercury can accumulate over time in the organic matter of lake sediments. In time, bacteria in the sediments convert the mercury into a form which can enter the food chain. It is then consumed by progressively higher life forms and eventually by full-sized fish where it bioaccumulates in their tissues. All species of fish can contain mercury, with generally the larger, older fish having the higher amounts. It is likely that mercury now detected in New Hampshire fish is more reflective of past emissions which may now be reduced or not active, rather than current emissions.

### **What is DES doing to reduce mercury emissions?**

First of all, DES has determined that all major sources of mercury emissions installed in the state since April 1990 are in compliance with toxic ambient air limits. The department is participating in regional and national efforts to understand the complex atmospheric chemistry associated with the transport of mercury and efforts to define methods to control mercury emissions. Due to the transport nature of mercury deposition, it is highly unlikely that any unilateral actions of the State will have a major impact on mercury deposition rates to New Hampshire lakes and ponds. If it is determined that a source of mercury exists that is controllable by State actions and is causing an unacceptable impact, appropriate regulatory actions will be taken to control that source.

### **How is New Hampshire reducing mercury emissions in the state?**

New Hampshire has been very proactive about reducing mercury in trash. Legislation was passed to reduce and eventually eliminate mercury in household batteries. New Hampshire was also one of the first states in the nation to adopt legislation to reduce mercury in packaging. In addition, DES has an active outreach program to encourage recycling, reducing the amount of trash that needs to be incinerated.